

BLM

Las Cienegas

National Conservation Area

Manager's Annual Report
FY 2014

2014

Manager's Annual Report



NATIONAL
CONSERVATION
LANDS

Arizona



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The Las Cienegas National Conservation Area southwest of Tucson, Arizona protects a landscape of rolling, oak-studded grasslands and lush riparian areas

1 Las Cienegas NCA Profile

Designating Authority

Designating Authority:

Public Law 106-538— Establishment of the Las Cienegas National Conservation Area

Date of Designation:

Dec 6, 2000

Location and Acreage

The Las Cienegas National Conservation Area (LCNCA) encompasses approximately 41,972 acres and is surrounded by the 95,609 acre Sonoita Valley Acquisition Planning District that was also designated by H.R. 2941. LCNCA is located in southern Arizona in Santa Cruz and Pima counties, about 45 miles southeast of Tucson, Arizona.

Contact Information

Unit Manager Karen Simms	Phone 520-258-7233	E-mail ksimms@blm.gov	Mailing Address 3201 E. Universal Dr. Tucson AZ, 85756
Tucson Field Office	Gila District Office	Arizona State Office	

Budget

Total FY14 Budget	Subactivity 1711	Other Subactivities' Contributions	Other Funding (Partners)
\$709,730	\$464,818	\$244,512	\$292,000 (volunteer labor)



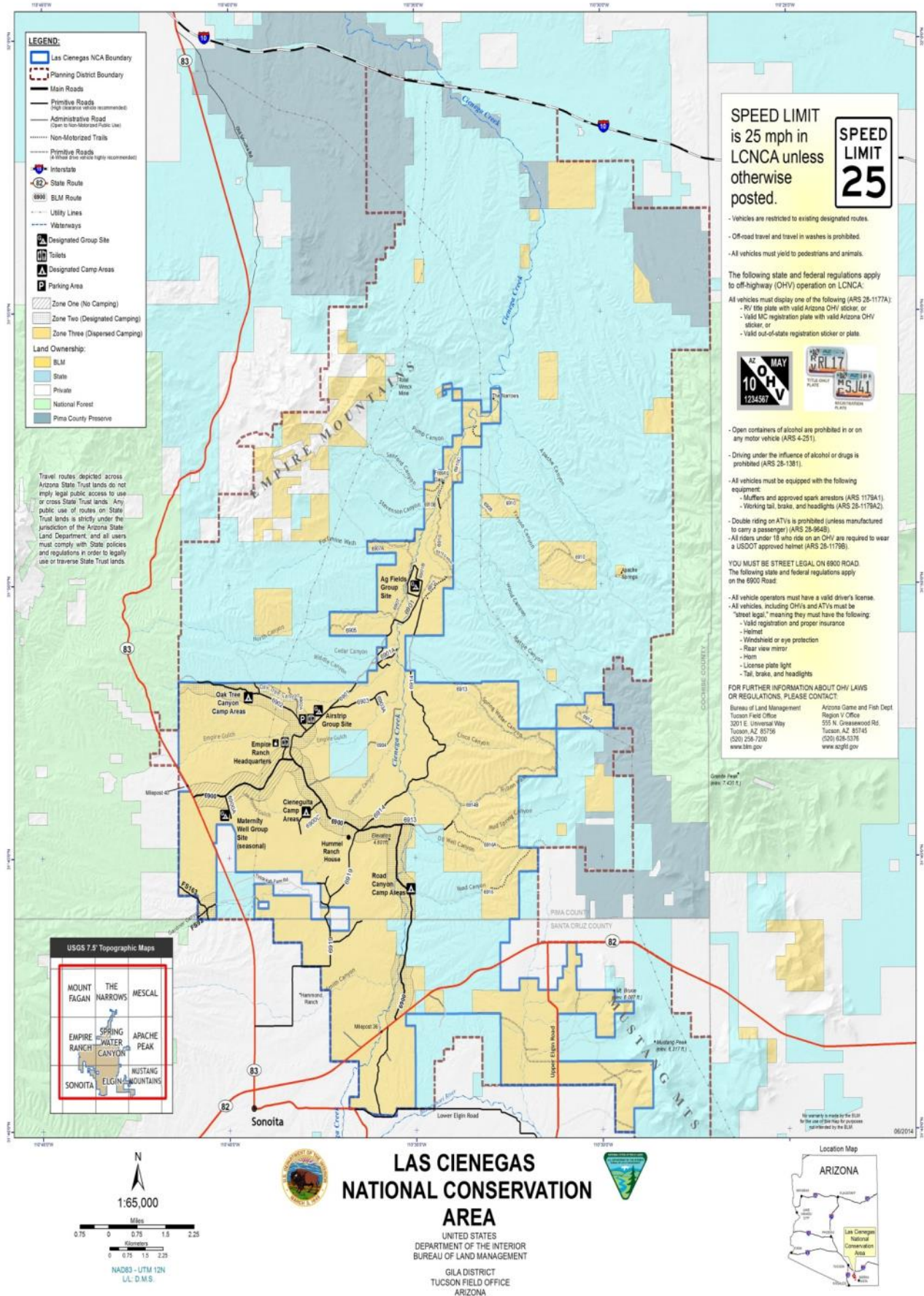


Figure 1 Map of Las Cienegas National Conservation Area

Managing Partners

N/A

Staffing

The Assistant Field Manager for the Tucson Field Office manages the LCNCA as well as several resource programs for the Field Office.

Outdoor Recreation Planner— 60% (also works on lands and activities in the north and west parts of Tucson Field Office)

Otherwise, LCNCA does not have a dedicated staff but work is accomplished by staff shared with the San Pedro Riparian National Conservation Area and Tucson Field Office. Staff members from the Gila District Office also provide support for the unit.

The staff members who have the majority of time allocated to LCNCA are: an Outdoor Recreation Planner, Service First (USFS-BLM) Archaeologist/Historic Preservation Specialist, Supervisory Facilities Operation Specialist, Fisheries Biologist, Hydrological Technician and Biological Technician.

Other staff members who regularly support LCNCA include Hydrologist, Wildlife Biologist, Natural Resources Specialist, Range Management Specialist, and Fire Management Specialist.

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Planning and NEPA

Status of RMP

- The *Las Cienegas Resource Management Plan* Record of Decision was signed in July 2003
- Next Steps:
 - Ø Finalize Resource Management Plan 10 -Year Evaluation Report
 - Ø Update RMP Implementation Strategy

Status of Activity Plans

The Las Cienegas RMP included both RMP decisions and several sets of implementation level strategies which covered major areas of activity such as Watershed Management and Grassland Restoration, Recreation Management, Grazing Management, Fish and Wildlife Habitat Management, and Transportation Management.

Watershed Management and Grassland Restoration: These strategies are focused on achieving watershed and upland objectives including objectives for grassland wildlife species. Strategies include integrated vegetation management including mechanical, herbicide and prescribed fire treatments as well as reintroduction of keystone species such as black-tailed

prairie dog. Since 2003, almost 30% of the vegetation treatment acres that were identified in the RMP are accomplished. Through FY14, BLM has accomplished 4,173 acres of mechanical treatment; 1,615 acres of chemical treatment; and 9,827 acres of prescribed fire.

Grazing Management: The Coordinated Resource Management Plan (CRMP) for the Empire-Cienega allotment will be finalized in FY15. This CRMP for the largest allotment on LCNCA includes strategies for flexible grazing management coupled with vegetation treatment and fish and wildlife habitat management strategies. The Vera Earl and Rosetree Allotments also have CRMPs in place.

Recreation Management: Approximately 33% of the recreation program infrastructure, including signs, maps, and recreation site structures are in place. Project management planning challenges are implementing vegetation treatments while managing for recreation.

Fish and Wildlife Habitat Management: Fish and Wildlife implementation actions are also incorporated into the RMP. The major focus has been grassland habitat restoration through vegetation treatments to benefit grassland dependent priority species such as pronghorn and grassland sparrows as well as reintroduction of black-tailed prairie dogs. The other major focus has been management of aquatic and wetland species through habitat restoration and supplemental releases to boost populations of several federally listed Threatened and Endangered species including the Northern Mexican garter snake, Gila topminnow, Chiricahua leopard frog, Desert pupfish and Huachuca water umbel.

Transportation Management Plan: This activity level plan was incorporated into the RMP and an estimated 80 % of the goal is complete.

Cultural Resources Management: Implementation actions for cultural resources have primarily focused on stabilization and adaptive reuse of historic properties including several stabilization and repair projects on the 23-room Empire Ranch House. Several other buildings and the historic corrals at the Empire Ranch Headquarters have been repaired and interpreted in partnership with the Empire Ranch Foundation. The Empire Ranch Foundation also operates a Visitor Contact station in the historic Huachuca House. Over 10,504 acres or approximately one-quarter of the LCNCA has been surveyed for cultural resources in preparation for vegetation treatments yielding a wealth of new information on prehistoric human occupation.

Status of RMP Implementation Strategy

The initial RMP Implementation Strategy was developed in 2004 as a collaborative effort with input from a variety of stakeholders and partners as well as the BLM interdisciplinary team. The strategy was developed for a five year timeframe and many of the higher priority projects have been implemented or are ongoing. The strategy needs to be updated and is scheduled for revision in FY15. As projects have been implemented, managers and staff have noted areas where the RMP or activity plans need to be updated.

Key NEPA Actions and/or Authorizations

Road Maintenance was the focus of key NEPA actions completed in FY14 including a Federal Highways-funded project on the main access routes. Projects to support reintroduction or augmentation of federally listed and priority wildlife species were also an emphasis.

LCNCA Road Maintenance Environmental Assessment (EA): This project will upgrade and restore major access roads within the LCNCA beginning in December 2014. Once finished, all 11 miles of the main BLM Route 6900 will be significantly improved. The project is expected to be completed on schedule by March 15, 2015.

Upon completion, the 3-mile double lane portion of BLM Route 6900 from Highway 83 to the intersection of BLM Route 6901 (to Airstrip Group Use Site) will have a new chip-sealed pavement surface, upgraded cattle guards, a new concrete low water crossing and improved erosion control. The 8-mile single lane segment north of Highway 82 will get similar treatment, but feature a fresh aggregate surface.

Funding was secured through the Federal Highways Administration Federal Land Transportation Program. The road became eligible for this source is the most recent reauthorization of the national transportation bill.

Aesthetic considerations were incorporated into the design process through the selection of appropriate colors for all road surfaces.

LCNCA Secondary Road Maintenance Categorical Exclusion (CX): This project will maintain the secondary roads on LCNCA. The work in 2014 took place on the 6902 and 6903 roads. The work on the 6902 road was mostly maintaining existing rolling dips. Rolling dips are low impact ditch structures that channel water off the road. The work on the 903 road included construction of 12-15 new rolling dips approximately every 300 to 500 feet depending on the terrain.



Cinco Well Pipeline Drinkers Determination of NEPA Adequacy (DNA): One of several cooperative projects to ensure continued access to water for livestock at existing wells where dirt tanks are being converted to refugia habitats for federally listed species.

LCNCA Pronghorn Augmentation DNA: Arizona Game and Fish Dept. (AGFD) is supplementing the existing Sonoita and San Rafael Valley pronghorn populations.



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Year's Projects and Accomplishments

General Accomplishments

BLM completed minor repairs and maintenance on the historic structures at the Empire Ranch headquarters including the Feed Barn, Huachuca House, South Barn, Empire Ranch House, Adobe Hay Barn, Corrals and Fences, and Shipping Corrals as well as on the Hummel House Adobe.

BLM completed maintenance of ongoing tamarisk control projects on three miles of Cienega Creek and Mattie Canyon.

BLM managed ten special recreation permits on LCNCA in FY14 including permits for bird-dog field trials, equestrian events, ATV tours and public events. BLM also maintained recreation facilities at the Airstrip group site and the Empire Ranch Headquarters. In addition, BLM accomplished 24 lane miles of road maintenance on LCNCA in FY14.

Visitation

An estimated 25,499 visitors enjoyed LCNCA during the 2014 fiscal year.

Monitoring Accomplishments in FY14.

- **Water Resources:** Monitoring of groundwater wells; surface waters on Cienega Creek and Empire Gulch; support for USGS gauge on Cienega Creek; and precipitation monitoring at 13 stations. Wet-dry monitoring on 13 miles of Cienega Creek and tributaries.
- **Rangelands:** Monitoring of 5 grazing allotments.
- **Wildlife and Fisheries:** Annual Mapping Avian Productivity and Survivorship (MAPS) bird-banding station on LCNCA with information gathered on individual birds from over 30 species; lesser long-nosed bat habitat monitoring; annual native fish monitoring; native frog monitoring.
- **Cultural Resources:** Site monitoring for 5 prehistoric and 25 historic resources.

Current Areas of Focus

1. Preservation of Historic Cultural Properties

In 2014, the contract for stabilization of the historic Adobe Hay Barn at Empire Ranch headquarters was issued. The project that will begin early in FY15 has two primary parts: (1) creating a steel framework that will improve the stability of the roof and its attachment to the walls; and (2) repairing and strengthening the foundations and the soils around them. In the Empire Ranch House, a manta or fabric ceiling was added to protect a new interpretive exhibit. Mantas were commonly used in adobe structures with earthen roofs to protect occupants from falling dirt from the roof. Several Empire Ranch House rooms have evidence of manta use.



Adobe Hay Barn



Hanging a Manta in Empire Ranch House 1



New Manta above Cowboy Life Exhibit

Other preservation activities in the Empire Ranch House were accomplished by Empire Ranch Foundation volunteers under the guidance of the Historic Preservation Specialist. These activities included refinishing the metal Youngstown Cabinets (1950s era) in the Family Kitchen; repairing holes at the base of the walls in the Middle Room of the Victorian Addition; re-mortaring the top of the exterior wall of the Foreman's Quarters with amended adobe; preparing new baseboards for installation; installing updated room description signs in all rooms of the Ranch House; and general

cleaning, wall patching and painting. Another volunteer preservation project was the continued assessment and repair of the corral fences and gates around the Loading Chute.

2. Supporting Recovery of Federally-listed species—Native Fish and the FROG project



Desert pupfish



Gila topminnow



Chiricahua leopard frog

LCNCA is home to nine federally-listed threatened and endangered species. Several projects completed between 2011 and 2014 maintained, developed, and/or enhanced habitats for five federally listed aquatic species, the Gila Topminnow, Desert pupfish, Chiricahua leopard frog, Northern Mexican garter snake and Huachuca water umbel.

The Cienega Watershed Partnership's FROG Project, funded by the National Fish & Wildlife Foundation with contributions from Pima County, the Cienega Watershed Partnership, the University of Arizona, and the Phoenix Zoo, has the goal to restore populations of the federally threatened Chiricahua leopard frog to a large (approx. 444 square miles) landscape in southeastern Arizona. The project is centered at LCNCA and private ranches and other public lands in the upper Cienega watershed and Sonoita plains in Pima and Santa Cruz counties. Project Activities which continued in FY2014 include control of exotic bullfrogs and crayfish; monitoring of Chiricahua leopard frog populations; education about and interpretation of native frogs and their habitats; and creation of refugia habitats.

In 2011, BLM, in partnership with AGFD and Bureau of Reclamation, enhanced wetlands at Cieneguita and Springwater on LCNCA. The wetlands were excavated to deepen them and both

bull frog and cattle exclusion fences were installed. The enhanced wetlands were stocked with endangered Gila topminnow, Desert pupfish and threatened Chiricahua leopard frogs in 2013 in a cooperative effort among BLM, AGFD, and USFWS biologists. BLM, CWP FROG project, and the grazing lessee partnered to develop additional permanent refugia ponds in 2014 at existing wells while continuing to provide water for livestock at each location. These refugia ponds were also stocked with the three species.

In 2014, BLM worked with FROG Project and high-school students in the Youth Engaged Stewardship (YES) program to maintain and monitor restored wetland habitats on LCNCA. Additional wetland vegetation was planted, cattails were removed, and additional cover features were added. BLM staff and volunteers also maintained refugia and wetland sites and monitored vegetation and water quality. Populations of reintroduced fish at all sites were monitored by AGFD and water quality measurements were also taken.



2. Ongoing Grassland Restoration



Grassland restoration projects continued on LCNCA in 2014. The goal of the long-term project is to remove 20,000+ acres of invasive mesquite in grassland community on LCNCA to expand habitat for priority species including pronghorn, black-tailed prairie dogs, and grassland sparrows. In 2014, 425 acres vegetation treatments were accomplished including mechanical grubbing of mesquite and biomass removal. Firewood permits were issued which utilized biomass from the treatments. This ambitious effort is developing into an outstanding cooperative project. Numerous partners are involved, each getting what they need to achieve their own goals and objectives. BLM partners include:

- **Pascua Yaqui Tribe** which helped remove downed mesquite and distributed to their people for their traditional uses and ceremonies.
- **Arizona Game and Fish Department** which is engaged in a reintroduction project for black-tailed prairie dogs and is also working on improving pronghorn population. Prairie Dog Colony habitat continues to improve by removing mesquite vegetation from colony sites to reduce predator impacts and improve grassland habitat.
- **United States Army- Fort Huachuca** which provided soldiers to stack downed mesquite for tribal use and local community firewood. Volunteer work enhanced team building among the soldiers.

3. Rosemont Mining Plan of Operation

In FY2014, the Rosemont Project continued to be a major focus and workload on LCNCA. The Rosemont Project is a proposed open pit copper mine in the Santa Rita Mountains that is currently being analyzed in an Environmental Impact Statement (EIS) by the Coronado National Forest for the upper watershed of Cienega Creek. Analysis presented in the EIS indicates impacts will occur at Empire Gulch including loss of groundwater which may result in loss of surface water there. Longer term, similar impacts may occur in Cienega Creek. Empire Spring supports the largest natural population of Chiricahua leopard frogs in the Cienega Creek basin. This population is the last remnant of an expansive population that once occupied Cienega Creek and lower Empire Gulch through the early 2000's, with a much wider distribution in surrounding grassland ponds in earlier decades. BLM is participating in the effort as a Cooperating Agency and providing technical evaluation of the EIS and related documents. This project is anticipated to be an ongoing issue into FY2015.

4. Climate Change: Climate change impacts continue to be another focal issue for FY 2014. Efforts in FY14 focused on seeking additional funds to continue the scenario planning effort; continued monitoring of water resources and precipitation; and planning projects to enhance resiliency in areas such as the sacaton grasslands in the floodplains of LCNCA. High school students from the YES program implemented a sacaton restoration project adjacent to the Gardner Canyon drainage that included installation of erosion control features around patches of sacaton grass and in bare areas using native materials. The students were mentored by scientists and educators from the Nature Conservancy, University of Arizona, Cienega Watershed Partnership, Prescott College – Ironwood Tree Experience, Empire High School and BLM.



Education, Outreach, and Interpretation

The Empire Ranch Foundation (ERF) is an interpretive association for BLM focused on preservation of the historic Empire Ranch headquarters and western cultural heritage at LCNCA. ERF provides interpretive walks and tours at Historic Empire Ranch Headquarters twice a month with an average of 20 people per event. The ERF also manages the Huachuca House Visitor Contact Station operations which include a small bookstore.

LCNCA supports Three Hands on the Land education programs in partnership with Empire Ranch Foundation and Cienega Watershed Partnership:

- **Wild About the Grasslands (WATG)** for elementary to high school students- an ecology and ranching heritage program with activities including summer camp, family fun days and customized school field trips. In 2014, 2 family days were provided and a nature journal was revised and printed in partnership with the Empire Ranch Foundation.
- **Youth in Wilderness (YIW)** - American Indian (Yaqui/Yoeme) learning their own cultural and natural heritage.
- **Youth Engaged Stewardship (YES!)** - summer program for high school students to actively engage in stewardship of natural and cultural resources through planning and implementing preservation and restoration projects with assistance of adult mentors.

Spotlight on Youth In Wilderness Program

BLM and the Pascua Yaqui community began a Youth in Wilderness (YIW) partnership ten years ago in LCNCA to provide opportunities for Pascua Yaqui youth to be outdoors and learn about their cultural heritage and its close ties with nature. Initially, a popular three day YIW campout was held at LCNCA. In 2013 a grant became available through the BLM and the Empire Ranch Foundation to continue YIW as a "Hands on the Land" outdoor classroom experience. YIW mentors have led nine family-friendly events with over 50 youth and adult participants at the Empire Ranch Headquarters. Educational experiences include learning about the Yaqui/Yoeme culture and heritage through guided walks in the cottonwood gallery of the Empire Gulch where mentors explain how important the elements of nature are to their culture (cottonwood trees, hummingbirds, deer and clay). Other activities include traditional storytelling, beginning wood carving on cottonwood, and discussions on how to preserve the Yaqui/Yoeme heritage. During **National Public Lands Day 2014**, participants built an adobe planter along the Heritage Discovery Trail, filled it with hummingbird attracting plants, and helped to plant shrubs at the Huachuca House Visitor Contact Station at Empire Ranch headquarters. Several follow-up classes were held at Old and New Pascua communities in Tucson.



Interpretation

The Map and Guide for LCNCA was updated and printed in 2014, providing visitors with information on LCNCA resources and a map of the transportation system. Interpretive panels focused on pronghorn, black-tailed prairie dogs, and raptors, designed by students in the HOL "Wild About The Grasslands" summer program, were installed at Empire Ranch headquarters.

and at Road Canyon. A black-tailed prairie dog interpretive panel designed and fabricated in partnership with AGFD and the Arizona-Sonora Desert Museum was installed next to the Cieneguita prairie dog colony. At Empire Gulch day use site, an interpretive panel on migratory birds was installed in partnership with the YIW program.

The Empire Ranch Foundation provided monthly docent tours of the Empire Ranch Headquarters throughout 2014. The Empire Ranch Foundation also designed and installed a Cowboy Life Exhibit in the Empire Ranch House which was funded using a grant from the Arizona Humanities Council (www.azhumanities.org). The Cowboy Life Exhibit includes panels which describe the role of vaqueros and cowboys in the history of the Empire Ranch as well as displays of period furniture and memorabilia.



Heritage Discovery Day

More than 100 people attended the Empire Ranch Heritage Discovery Day on March 8, 2014, hosted by the Empire Ranch Foundation and its Wild About the Grasslands (WATG) education program. The event celebrated 2014 Arizona Archeology and Heritage Awareness Month. Participants enjoyed a presentation on the "History of Mining in the Empire Mountains and the Total Wreck Mine," by author, historian, public interpreter and researcher William Ascarza. Also joining in on activities for the day were 33 Girl Scouts and Boy Scouts from Sierra Vista, who enjoyed learning basic compass skills and the sport of letterboxing. Those attending also enjoyed docent-led guided tours of the historic Empire Ranch House.

Partnerships



Partnerships were celebrated in 2014 on LCNCA! The Cienega Watershed Partnership and affiliated organizations were recipients of the Secretary of Interior's Partners in Conservation Award in 2014. Representatives of several agencies and organizations traveled to Washington DC to receive the award.

1. Cienega Watershed Partnership

The Cienega Watershed Partnership (CWP) was formed in 2006. The CWP is a nonprofit organization whose mission is to coordinate and help resource landscape stewardship

initiatives for the landscape that runs from Saguaro National Park and the Rincon Wilderness to the Canelo Hills south of Sonoita and from the crown of the Santa Rita Mountains east to the crown of the Whetstone Mountains. The CWP also coordinates the activities of two adhoc organizations, the Sonoita Valley Planning Partnership and the Cienega Corridor Conservation Council. CWP projects include YES! - Youth Engaged Stewardship, FROG, Oral History and Back Then. CWP supports the annual Science on the Sonoita Plain Meeting, the State of the Watershed Workshops, and the Biological Planning meetings.

<http://www.cienega.org>

2. Empire Ranch Foundation

The Empire Ranch Foundation is a non-profit volunteer organization that was established in 1997. Acting in cooperation with the Bureau of Land Management, the purpose of the Foundation is to protect, restore and sustain the Empire Ranch historical buildings and landscape as an outstanding western heritage and education center. The Empire Ranch Foundation funds its projects through the support of members, individuals and businesses, through public, corporate and foundation contributions and grants, and through proceeds from special fundraising activities.

The Empire Ranch Foundation provides staffing for the Huachuca House visitor contact station at Empire Ranch Headquarters several times each month. Monthly docent tours are offered as well as cultural events such as the Empire Ranch Roundup. Volunteer days are held every other month. For more information see: <http://www.empireranchfoundation.org>

3. Audubon Research Ranch

The Research Ranch is a cooperative partnership among the National Audubon Society, U.S. Forest Service, Bureau of Land Management, The Nature Conservancy, Swift Current Land & Cattle and The Research Ranch Foundation. The Research Ranch lies three miles south of Elgin, and 65 miles southeast of Tucson Arizona. It is surrounded by 5 million acres of semi-desert grassland and forested mountains covering southeastern Arizona and adjacent portions of Mexico and New Mexico. The Research Ranch is within the southern boundary of Las Cienegas NCA and plays an important role in supporting science on the NCA. For more than 30 years, the Research Ranch has protected grassland ecosystems through conservation, research, and education. The Research Ranch provides 3 key functions: ecosystem conservation, research, and regional education and outreach.

<http://researchranch.audubon.org>

4. Service-First, Coronado National Forest /BLM TFO - Archaeologist /Historic Preservationist. BLM receives half-time services of a Historic Preservationist through the Service First program with the Coronado National Forest.

<http://www.doi.gov/partnerships/tools/stories/service-first-initiative.cfm>

5. Biological Planning Team

Biological Planning is a collaborative process to implement adaptive management on the flexible management prescriptions in the Las Cienegas Resource Management using the best available science and with opportunity for meaningful stakeholder involvement to reduce conflicts. The Biological Planning Team consists of four



technical teams—Landscape, Uplands, Riparian, and Heritage that are organized by a Coordinating Committee. In Addition, the Biological Planning Team includes interested stakeholders and participants. Technical teams provide input on data collection and analysis and support for special projects. All technical teams, stakeholders, and interested public are invited to attend the twice-yearly biological planning meetings, which focus on landscape and upland areas and flexible grazing management at the Fall meeting and riparian and heritage resources at the Spring meeting. More information is available at <https://sites.google.com/site/lcncaadaptivemanagement/>

Volunteers

In FY14, volunteers contributed 13,279 hours to the BLM on Las Cienegas NCA valued at over \$292,000. Empire Ranch Foundation's volunteers contributed over 7,627 of those hours providing docent tours, education programs, work at special events, and volunteer work days on LCNCA. Site Hosts stationed at Empire Ranch Headquarters are volunteers who are highly valued for their dedication and work accomplishments. Other projects generating volunteer hours were Cienega Watershed Partnership's Youth Engaged Stewardship program (50 hours), annual wet-dry monitoring on Cienega Creek (, and rangeland monitoring efforts.

Budget

The budget for the LCNCA for FY 14 was \$709,730. This was broken down as \$517,170 base, \$110,000 directed base and \$82,560 one time.

The fund code breakdown for the year was:

1010 (Soil, Water, Air) Program -	\$ 41,460
1040 (Riparian) Program -	\$ 84,098
1050 (Cultural) Program -	\$ 193
1110 (Wildlife) Program -	\$ 22,494
1120 (Fisheries) Program -	\$ 39,923
1150 (Endangered Species) Program -	\$ 6,246
1220 (Recreation) Program -	\$ 46

1232 (Recreation Fees) -	\$ 2,668
1610 (Planning) Program -	\$ 14,156
1653 (Deferred Maintenance) -	\$ 22,836
1660 (Annual Maintenance) -	\$ 400
1711 (NMs/NCAs) Program -	\$464,818
2110 (Construction) Program -	\$ 6,985
8100 (Grazing Fees) -	\$ 3,407
TOTAL	\$709,730

Land or Easement Acquisitions

N/A

4

Science

Science - The annual Science on the Sonoita Plain symposium was held on June 7, 2014 at the National Audubon Society's Appleton-Whittell Research Ranch. The focus in 2014 was on mesquite management and ecology with updates on new and continuing scientific efforts on other topics. The following table summarizes new and ongoing inventory and research projects on LCNCA.

Las Cienegas National Conservation Area Fiscal Year 2014 Science Efforts					
Project Name	Description	Principal Investigator	Key Words	Project status	BLM Contributed Funds
Monitoring Avian Productivity and Survivorship (MAPS)	Bird Banding effort from May-August to examine avian population trends including productivity and survivorship	BLM Staff	Birds, Banding, Productivity, Survivorship	Ongoing	\$6K (annually)
Wildlife Tracking	Monitoring to detect mammalian use of movement corridors	Sky Island Alliance	Mammals, corridors	Ongoing	0
Las Cienegas Grassland Restoration and Avian Response	Assess avian response to vegetation management / grassland restoration including prescribed fire and mechanical	University of Arizona	Impacts of vegetation management on birds	Ongoing	\$120K since 2004

	treatments				
LCNCA Breeding Ecology of Arizona Grasshopper sparrows	Research on the life history and breeding ecology of Arizona Grasshopper Sparrows.	USGS	AZ Grasshopper Sparrow; breeding ecology	Report	\$75K since 2009
Cretaceous Surveys on LCNCA	Inventory potential Cretaceous deposits for fossil remains.	Arizona Museum of Natural History	Cretaceous formations, fossils	Ongoing	\$10K
Oral History	Preserve oral history interviews for the Cienega watershed and SE Arizona region.	Cienega Watershed Partnership	Preserve and share Oral History	Report, Training Workshops,	\$10K
Assessing Black-tailed Prairie Dogs on LCNCA	Research on survivorship, recruitment, behavior and habitat use of BTPD.	University of Arizona	Prairie dogs, reintroduction, survivorship	Ongoing	\$50K
Cienega Research	Inventory for presence of Cienega habitats, map Cienegas, botanical inventory and source waters.	Desert Botanical Garden	Cienegas, water sources, botany	Ongoing	\$6K
Frog Surveys	Surveys for threatened Chiricahua leopard frogs and for exotic bull frogs. Bull frogs are eradicated.	University of Arizona, CWP, AGFD, USFWS	Leopard frogs bullfrogs	Ongoing	\$100K
Totals (\$)					\$116,000



Science on the Appleton-Whittell Research Ranch, Las Cienegas NCA

The Appleton-Whittell Research Ranch of the National Audubon Society is a collaborative effort among Audubon, Bureau of Land Management, Swift Current Land & Cattle Company, The Nature Conservancy, The Research Ranch Foundation, and U.S. Forest Service. The 8,000 acre sanctuary for native plants and animals and ecological research facility is located in southeastern Arizona. The BLM lands within the Research Ranch are within the southern boundary of Las Cienegas NCA. The mission of the Research Ranch is to be a living laboratory to determine and demonstrate methods to safeguard and rehabilitate southwestern grasslands, and to assist policy makers and other citizens in the care and protection of our native ecosystems, natural resources, and quality of life.

The following research and inventory projects on the Research Ranch meet one or more criteria: Proposal approved but project not commenced; Field work/research within past two years; Publication received within past two years; Publications pending; Publications in demand within past two years; Projects with return intervals >1 year; Collaborative, long term efforts.

* Indicates field work or data harvesting in 2013 (latest data available).

Investigating the effect of livestock on the physical properties of soil in an arid grassland.

Allington, Ginger (Missouri Botanical Garden) & Thomas J Valone (Saint Louis University)

***Effect of mesquite cover on avian diversity, density and reproductive success in desert grasslands.** Anderson, Erik and Dr. Robert Steidl (SNRE, University of Arizona).

Fish Surveys. Arizona Game and Fish Department.

***Desert Pupfish.** Ross Timmons (Arizona Game & Fish Department).

***Survey of Gould's Turkeys near Huachuca Mountains.** Arizona Game & Fish Department.

***Avian Monitoring for Research Ranch IBA.** Tice Supplee (Audubon Arizona).

***Bullfrogs, Monitoring and Treatment on the Research Ranch.** Audubon Staff

***Christmas Bird Count – Appleton Whittell Circle.** Audubon staff; Robert Wessler (Huachuca Audubon Society).

***Depth to groundwater on Research Ranch.** Audubon Staff & Volunteers

***Ecological Site Monitoring (ESM).** Audubon Staff– Linda Kennedy

***Precipitation at Ecological Sites.** Audubon Staff – Linda Kennedy

Effects of fire and climate change on mesquite. Audubon Staff – Linda Kennedy

***Effects of fire and climate change on cacti.** Audubon Staff – Linda Kennedy

***Small mammal populations on the Research Ranch.** Audubon Staff - Linda Kennedy

Agave Monitoring on the Coronado National Forest. Biedenbender, Sharon (USFS).

***Effects of Wildfire on Riparian Trees in Southeastern Arizona.** Bock, Carl & Jane Bock. (University of Colorado, retired).

Soil inventory update. Breckenfeld, Donald J. & Daniel Robinett (U.S.D.A. N.R.C.S, retired).

Population dynamics and habitat characteristics of Montezuma (Mearn's) Quail in southeastern Arizona. Chavarria, Pedro Mazier (Texas A & M University).

Herpetofauna of the Research Ranch. Cogan, Roger (Research Ranch).

***Rattlesnake Wintering Sites.** Cogan, Roger (Research Ranch).

A History of the Lands in the National Audubon Society's Research Ranch Near Elgin, in Santa Cruz County, Arizona. Collins, Glendon E. (BLM (retired), AZ State Trust Lands (retired)).

Honeybee communication and the ecological context. Donaldson-Matasci, Matina. (University

of Arizona).

***Current Distribution and Status of Slevin's Bunchgrass Lizard, *Sceloporus slevini*, in southeastern Arizona.** d'Orgeix, Christian, Ph.D., Virginia State University.

***Survey of Appleton-Whittell Research Ranch Drainages and Ponds for the Mexican Garter Snake.** d'Orgeix, Christian. (Virginia State University).

Finding effective strategies for adding native diversity into heavily invaded grasslands
Fehmi, J.S., (University of Arizona).

Genetic approach for using pollen to determine plant resources used by nectarivorous bats.
Ferguson, George (University of Arizona).

***Using soil moisture to assess ecosystem function following exotic lovegrass invasion in semiarid grasslands of southeastern Arizona.** Fernald, Alexander G. (Sam), (New Mexico State University).

Merging functional ecology and phylogenetics to predict the response of grasslands to global change. Forrestel, Elisabeth, Melinda Smith, Ph.D., Yale University.

***Conservation Effects Assessment Project on the Cienega Creek Watershed.** Goodrich, David C. and Haiyan Wei. (USDA-ARS).

***Research Ranch boundary surveying and mapping.** Greene, Dale and Kristen L. Greene. (TerraData AZ. LLC).

Survey of high desert grasslands Hymenoptera. Grissell, Eric (USDA retired).

Monitoring wildlife in and near the Appleton-Whittell Research Ranch using trail cameras
Hass, C.C. (Borderland Carnivore Studies).

Introduction of Species Diversity into Boer Lovegrass Monocultures. Hershendorfer, Mary and Ramona Gardner (USDA-NRCS).

***Photo-herbarium for the Research Ranch.** Kennedy, Linda (Research Ranch).

***Sacaton Rehabilitation.** Kennedy, Linda (Research Ranch).

Oak (*Quercus*) water use strategies in Sky Island Systems. Lackey, Russell (Texas Tech University)

***Modeling impacts of habitat alterations on habitat use and diet selection of desert reptile communities.** Lattanzio, Matthew S. (Ohio University).

***Avian Survey/Monitoring on the Research Ranch.** Leonardini, Tony. (Volunteer).

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***Meteorological Station.** USDA-ARS, Keefer, Tim.

Natural Resources Inventory – Primary Site Unit. USDA-NRCS, Carrillo, Emilio.

***Rangeland Health Reference Areas.** USDA-NRCS, Renken, Wilma.

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The Effects of Fire and Grazing on Grassland Bird Diversity and Abundance in an Arizona Oak-Savanna. Nichols, Clay (Eastern New Mexico University).

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Inventory of ecological sites, their present day condition, trend and rangeland health.

Robinett, Dan & Don Breckenfeld, (U.S.D.A. –N.R.C.S. both retired).

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Resources, Objects, Values, and Stressors

Conservation Values for Las Cienegas NCA

FROM Public Law 106-538 IN GENERAL - In order to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the unique and nationally important **aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland, and riparian resources** and values of the public lands described in subsection (b) while allowing livestock grazing and recreation to continue in appropriate areas, there is hereby established the Las Cienegas National Conservation Area in the State of Arizona.

Conservation Value #1—Aquatics



Aquatics Status and Trend Table

Status of Resource, Object, or Value	Trend
Aquatic habitat—Good, some areas experiencing drought and drying	Static with some areas downward due to drought and other stressors reducing surface water in creeks.

Native Fish - Good	Upward due to species reintroductions and creation of refugia habitats.
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Aquatics Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
13 miles streams plus all 38 acres wetland		13 miles stream plus 38 acres wetland	10 acres wetland and 13 miles of stream

Stressors Affecting Aquatics

Loss of surface water, invasive species, climate change,

Conservation Value #2—Wildlife and Fish

The RMP identifies 18 priority wildlife species including the following:

Fish

Gila topminnow (E), Gila chub (E) Longfin dace (addressed in aquatics)

Amphibians and Reptiles

Lowland leopard frog, Chiricahua leopard frog (T) Mexican garter snake (T)

Birds

Southwestern willow flycatcher (E) Yellow billed cuckoo (E)

Gray hawk (key raptor species) Baird's sparrow (key grassland sparrow) Botteri's sparrow (key sacaton species)

Mammals

Jaguar (E), Lesser long-nosed bat (E), Pronghorn (desirable big game and watchable wildlife species), Mule deer (desirable big game species), White-tailed deer (desirable big game species), Javelina (desirable big game species)



Wildlife and Fish Status and Trend Table

Western Yellow-billed Cuckoo

Status of Resource, Object, or Value	Trend
Wildlife—good for most priority species	Upward for most priority species; mule deer are down.

Wildlife and Fish Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	41,972	41,972	Habitats monitored at upland and riparian key areas

Stressors Affecting Wildlife and Fish



Loss of movement corridors, habitat alterations, loss of water supplies, drought, climate change, livestock grazing, recreation

Conservation Values #3 and #4 — Vegetation and Rangeland

LCNCA supports five of the rarest plant communities in the American Southwest including semi-desert grasslands, sacaton grasslands, mesquite bosques, cottonwood willow riparian areas and cienega wetlands.

Huachuca water umbel, a federally listed endangered plant, is found along riparian areas of Cienega Creek.

Monitoring data is collected for vegetation attributes including basal and canopy cover of perennial grasses and canopy cover and density of woody species at key areas in the uplands. Objectives for perennial basal grass cover vary across ecological sites.

[Endangered Huachuca Water Umbel on LCNCA](#)

Vegetation and Rangeland Status and Trend Table

Status of Resource, Object, or Value	Trend
Vegetation—good for most priority vegetation communities	Upward for most priority vegetation communities

Vegetation and Rangeland Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	41,972	41,972	Vegetation Communities monitored at upland and riparian key areas

Stressors Affecting Vegetation and Rangeland

The stressors affecting vegetation and rangeland include drought, climate change, invasive species, noxious weeds, livestock grazing, recreation and increased mining, agricultural and housing development on surrounding lands.

Conservation Values # 5, #6, #7—Archaeological, Cultural and Historical

Over 7,000 years of human occupation has been documented on Las Cienegas NCA from prehistoric times through more recent historic occupation. The Empire Ranch House at the Headquarters is listed on the National Register of Historic Places. There are many other national register eligible cultural sites and properties on the NCA.



Archaeological, Cultural and Historical Status and Trend Table

Status of Resource, Object, or Value	Trend
Archaeological Resources—Good	Static

Archaeological, Cultural and Historical Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
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41,972	10,000 (class III)	App. 500	20—30 sites on apx 500 acres
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Stressors Affecting Archaeological, Cultural and Historical

Looting/vandalism of sites, lack of funding for historic property stabilization, climate, erosion in drainages and streams.

Conservation Value #8—Paleontology

Predominant vertebrate fossils on Las Cienegas NCA are from the Cretaceous period. Over 27,000 acres have been inventoried by the Arizona Museum of Natural History. Thirty-eight paleo specimens have been recovered. Notable discoveries include a primitive hadrosaur dinosaur, likely a new genus, trionychid and adociid turtles, and a variety of theropod teeth.



Paleontology Status and Trend Table

Status of Resource, Object, or Value	Trend
Cretaceous Paleontology	upward

Paleontology Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	27,520	App 1000	App 1000

Stressors Affecting Paleontology

Looting and vandalism of sites; erosion



Conservation Value #9—Scientific

Scientific Status and Trend Table

Status of Resource, Object, or Value	Trend
Scientific	upward

Scientific Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried ¹	Acres Possessing Object	Acres Monitored ²
41,972	41,972	41,972	6000

¹Estimate of Acres Inventoried as part of Science Projects

²Estimate of Acres Monitored as part of Science Projects

Stressors Affecting Scientific Values

Stressors on scientific values include those that are stressors on the resources which are the subject of scientific studies. Stressors include climate change and drought; invasive species; surrounding developments such as mining, energy, agriculture or housing development, and intensive recreation that may conflict with implementing science projects. Section 4 contains information on research and science projects on the NCA.

Conservation Value #10—Caves

There are no known caves on Las Cienegas NCA although several caves have been discovered at higher elevations in the Coronado National Forest.

Conservation Value #11—Recreation Opportunities

Las Cienegas NCA provides outstanding opportunities for dispersed recreation and organized group activities. Popular recreation activities include sight-seeing, bird-watching, horseback riding, hunting, and bird-dog field trials.

Recreation Opportunities Status and Trend Table

Status of Resource, Object, or Value	Trend
Recreation Opportunities	upward

Recreation Opportunities Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	41,972	41,972	Apx 5,000 annually

Stressors Affecting Recreation Opportunities

Increased visitation creating user conflicts, border activity, conflicts with other programs such as livestock grazing, land use authorizations, restoration such as vegetation treatments.

Conservation Value #12—Educational

Educational Status and Trend Table

Status of Resource, Object, or Value	Trend
Educational	upward

Educational Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	N/A	41,972	N/A

Stressors Affecting Educational Values

Stressors affecting educational values are similar to those affecting recreation and include increased visitation creating user conflicts, border activity, conflicts with other programs such as livestock grazing, land use authorizations, restoration such as vegetation treatments. In addition activities surrounding the NCA such as increased mining, agricultural, and other development may impact the setting for educational programs. Pages 11-13 in Section 3 contain information on education programs on the NCA.

Conservation Value #13—Scenic

Las Cienegas NCA is designated as Visual Resource Management Class 2 to maintain scenic values.

Scenic Status and Trend Table

Status of Resource, Object, or Value	Trend
Good	static

Scenic Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	41,972	41,972	Case by case with new proposals

Stressors Affecting Scenic Values

Land use authorizations such as mines, roads, power lines and other infrastructure.

Conservation Value #14—Riparian

On LCNCA, Cienega Creek and its major tributaries support some 20 linear miles of riparian forest and marshland, flanked in some areas by sacaton floodplain grasslands and/or mesquite bosques. NCA drainages support many more miles of xeroriparian shrub communities. BLM has implemented three major riparian management actions since lands that are now in LCNCA were acquired in 1989: fencing the creek from livestock, closing wet road crossings, and returning natural flow to 2 miles of natural streambed by removing dikes and canals. Ecological monitoring shows that these restoration efforts have been quite successful. The percent of creek miles in Proper Functioning Condition increased from 2% in 1993 to 61% in 2000. Non-functioning miles decreased from 5% to 0. Riparian photopoints and aerial photos show a dramatic expansion of riparian cottonwood-willow forest since 1989. Tree belt transects sampled in 1993 and again in 2006 show increases in riparian tree densities along with shifts in age structure and species composition. Channel cross-sections measured in 1993 and repeated in 2006 showed stability in several sensitive areas and aggradation in the upper reach, raising the channel surface some three feet towards its original floodplain. Cienega Creek still faces several threats including loss of both surface water and shallow groundwater, invasive species, channel erosion, and destabilized streambanks.



Cienega Creek 1989



Cienega Creek 1993



Cienega Creek 2006

Riparian Status and Trend Table

Status of Resource, Object, or Value	Trend
Riparian - Good	Static for stream riparian areas and upward for wetland riparian areas (Cienegas)

Riparian Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored
41,972	41,972	13 miles of streamside riparian and 38 acres of wetland	monitored at 5 riparian key areas on streams and at 3 wetland (cienega) sites

Stressors Affecting Riparian Resources

The stressors affecting riparian resources include drought, climate change, invasive species, noxious weeds, livestock grazing, recreation and increased mining, agricultural and housing development on surrounding lands.

6 Summary of Performance Measure

Overall the Conservation Values of Las Cienegas NCA have improved and are stable. Some Conservation Values are being stressed by drought and diminished access to water. Climate change and increased development are additional stressors. Restoration projects and reintroduction of species have improved the status of many priority species as well as provided increased resiliency against stressors. Cultural clearances completed for vegetation treatments have greatly increased the knowledge base of cultural resources. Similarly, research efforts into Cretaceous deposits have expanded paleontological information. There are some impacts from grazing, recreational and smuggling activities. Ongoing monitoring supports adaptive management of NCA resources and uses.

Summary Table*

Resource, Object, or Value	Status	Trend
Aquatics	Good	Upward
Wildlife and Fish	Good	Upward for most priority species, some downward
Vegetation and Rangeland	Good	Static to Upward depending on the resource.
Archaeological, Cultural and Historical	Good	Stable; upward for some historic resources
Paleontological	Good	Stable, knowledge increasing
Scientific	Good	Upward - Many new and ongoing projects
Caves	None known	
Recreation Opportunities	Good	Static to upward depending on activity
Educational	Good	Static to upward depending on activity
Scenic	Good	Static
Riparian Resources	Good	Static to upward trend; some areas downward due to drought

7

Manager's Letter

As the Manager for Las Cienegas NCA, I am honored to present our **2014 Annual Report** that documents the hard work of our BLM staff and the many partners we collaborate with on the NCA. It is hard to believe that ten years have passed since the completion of the Las Cienegas Resource Management Plan. During the past ten years, so much has been accomplished on the NCA. Several thousand acres of grassland restoration have occurred through removal of mesquite; and a keystone grassland species, the black-tailed prairie dog, has been reintroduced. Burrowing owls have established on the prairie dog colonies and pronghorn ranges have also expanded.

In conjunction with the vegetation treatments, over 10,000 acres of cultural surveys have been completed providing new insights into past occupants of this valley. Similarly, nearly half the NCA has been inventoried for paleontological resources with discoveries of some significant Cretaceous vertebrate fossils. Our partnership with the Empire Ranch Foundation (ERF) has resulted in stabilization and adaptive reuse of several historic structures including the Huachuca House which now serves as the Visitor Contact Station with interpretive displays, docent tours and educational programs.

We have collaborated with Cienega Watershed Partnership (CWP) on the FROG project which has resulted in major accomplishments in conservation of the threatened Chiricahua leopard frog. Working with Arizona Game and Fish Department and US Fish and Wildlife Service, we have reintroduced the endangered Desert Pupfish, and supplemented populations of endangered Gila topminnow and Huachuca water umbel to provide increased security for these populations.

Both ERF and CWP have developed new or expanded youth programs to reconnect children and youth with the NCA's natural and cultural resources. To the south, we have continued to work with the Audubon Research Ranch on our science program including the annual Science on the Sonoita Plain meetings. We continue to implement adaptive management including flexible livestock grazing through our biological planning process with input from four technical teams and the stakeholders engaged in the twice-yearly biological planning meetings.

This year we will conduct a 10-year evaluation of the RMP and associated implementation actions. One thing we know for sure going into this evaluation is that BLM could not have accomplished so much without our excellent staff and the dedicated support of our partner organizations and stakeholders.

Karen Simms

Assistant Field Manager, Las Cienegas National Conservation Area Manager



**NATIONAL
CONSERVATION
LANDS**

Las Cienegas National Conservation Area

Bureau of Land Management

Tucson Field Office

3201 E Universal Drive

Tucson, AZ 85756

Phone: 520-258-7200

February 12, 2015

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